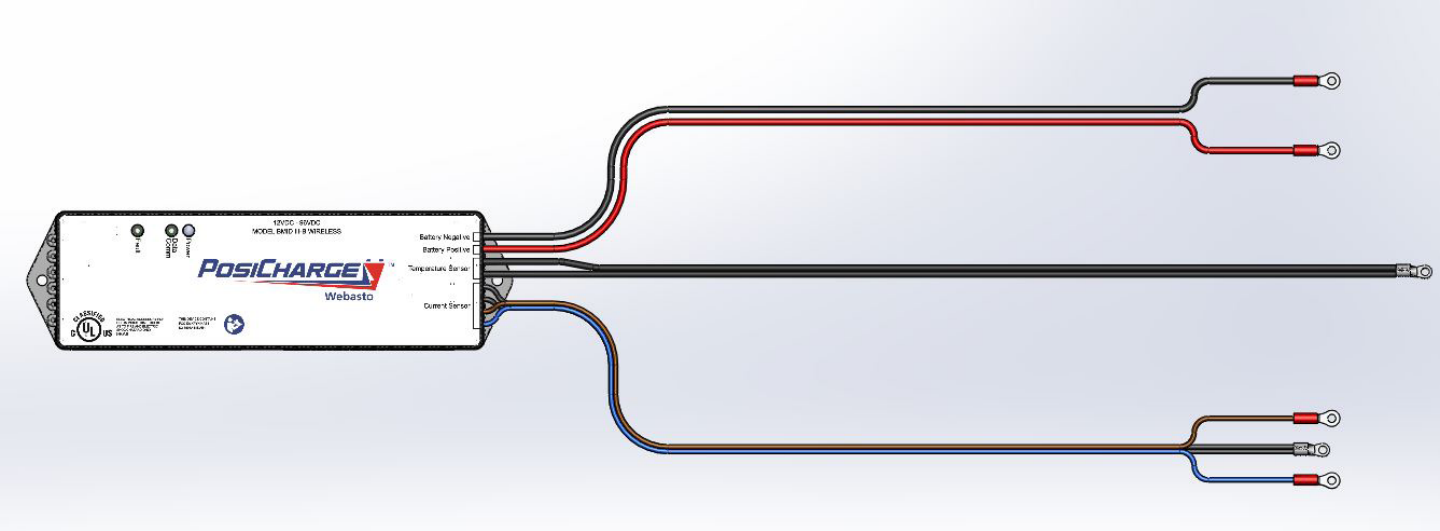
# BMID III-B (BatteryRx™)
# Battery Management Tool
# Installation Manual




**BMID unit installation requires proper programming and calibration – please follow the instructions and fill in the data validation sheets for submittal.**

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Rev 06/06/24

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This BMID Installation Manual includes the latest information available at the time of printing. Ampure, reserves the right to make changes to this product without further notice. Changes or modifications to this product by other than an authorized service provider could void the product warranty.



## FCC Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This product has been designed to protect against Radio Frequency Interference (RFI). However, there are some instances where high powered radio signals or nearby RF producing equipment (i.e. digital phones, RF communications equipment, etc.) could affect operation.

If interference to your charge station is suspected, Ampure recommends the following steps be taken prior to contacting customer support for assistance.

1. Relocate nearby electrical appliances or equipment during charging.
2. Turn OFF nearby electrical appliances of equipment during charging.

| | |
|---|---|
|  **WARNING** | Changes or modifications to this product by other than an authorized service provider could void FCC compliance. |

## Save These Instructions

This document is your guide to installation and use of the PosiCharge BMID products.
The installation examples shown are for batteries in material handling vehicles.

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# Table of Contents

**IMPORTANT INFORMATION – SAVE THESE INSTRUCTIONS**

## 1 – Scope

This manual describes the installation procedures for the BatteryRx.

## 2 – Overview

| | |
|---|---|
|  **WARNING** | Read and follow the instructions and warnings in this Manual before attempting to install or service this product. Failure to do so can result in serious injury or death. Keep this Manual for future reference. |

The BatteryRx Battery Charging Monitoring System, referred to in this manual as BatteryRx, performs several functions. The Battery Rx:

- Records performance data for the life of the battery
- Monitors battery health continuously

During a charge cycle, the BatteryRx transmits charging requirements to the battery charger. Ampure battery charger manuals refer to this function as a BMID.

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The BatteryRx is installed on the top of the battery and includes all hardware required to perform installation.

The BatteryRx has three interfaces:

1. Voltage sensor
2. Current sensor
3. Temperature sensor

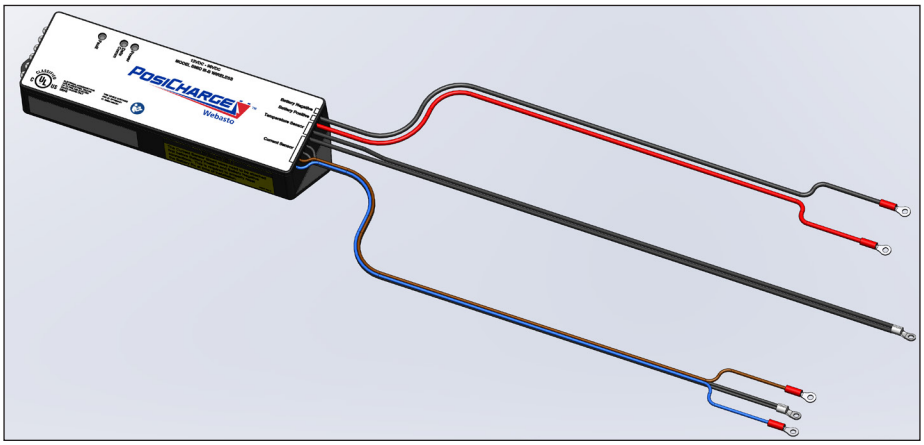


**Figure 1 – BatteryRx**

## 3 – Symbol Usage

Take special note of the information marked with the following symbols throughout this manual:

| | |
|---|---|
| **DANGER** | Contains information about safety practices necessary to prevent personal injury or death. |
| **WARNING** | Contains information about safety practices necessary to prevent fire or equipment overheating. |
| **NOTE** | Offers helpful information for installation or usage, but does not contain personnel or equipment safety related information. |

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# 4 – Installing the BatteryRx

| | |
|---|---|
| **WARNING** | An improperly installed Battery Rx may cause the charger to charge incorrectly, and may void your battery warranty. |
| **DANGER** | Electric shock hazard. Only trained personnel should install or maintain this equipment. |
| **DANGER** | Hydrogen gas may be present in battery compartments. Be sure to work on equipment only in a well-ventilated environment. |
| **DANGER** | Battery Rx modules are installed on electrically live battery packs. Use insulated tools during the installation. |

The Battery Rx should be located near the center of the battery pack.

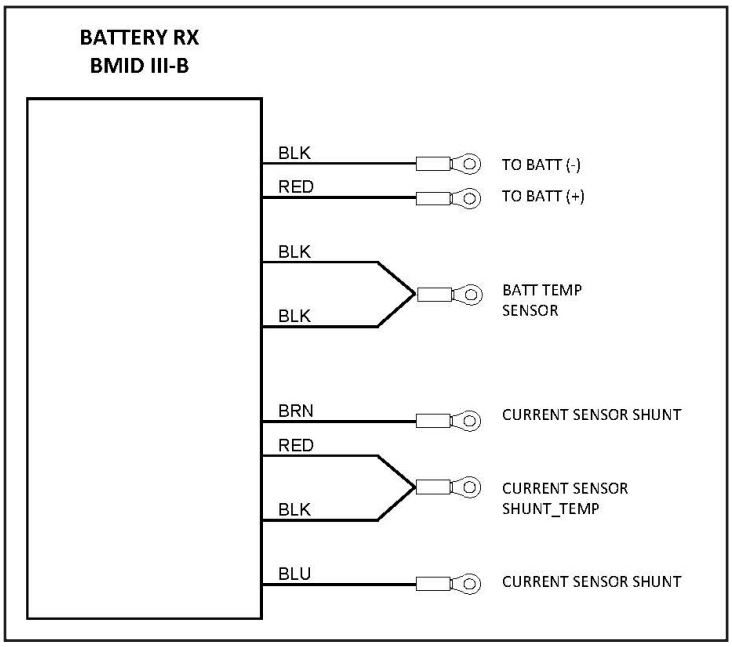
NEW

**IMPORTANT:**
All of the sensor wires must be installed correctly in order for the BMID III-B to connect to the charger.

If any of the sensor wires (including the current sensor wires) are not installed correctly, the BMID III-B WILL NOT CONNECT to the charger.

## 4.1 – Wiring for Voltage, Current, Battery Temperature and Shunt Temperature Sensor

1. Battery Negative – attach to the negative battery terminal.
2. Battery Positive – attach to the positive battery terminal.
3. Battery Temperature Sensor – attach to a cell interconnect near the center of the battery.
4. Current Sensor Shunt (Brown) – attach to the negative (-) end of the cell interconnect, which is the side farthest from the negative terminal.
5. Current Sensor Shunt Temp (Black) – attach to the center of the interconnect.
6. Current Sensor Shunt (Blue) – attach to the positive (+) end of the cell interconnect, which is the side nearest the negative terminal.



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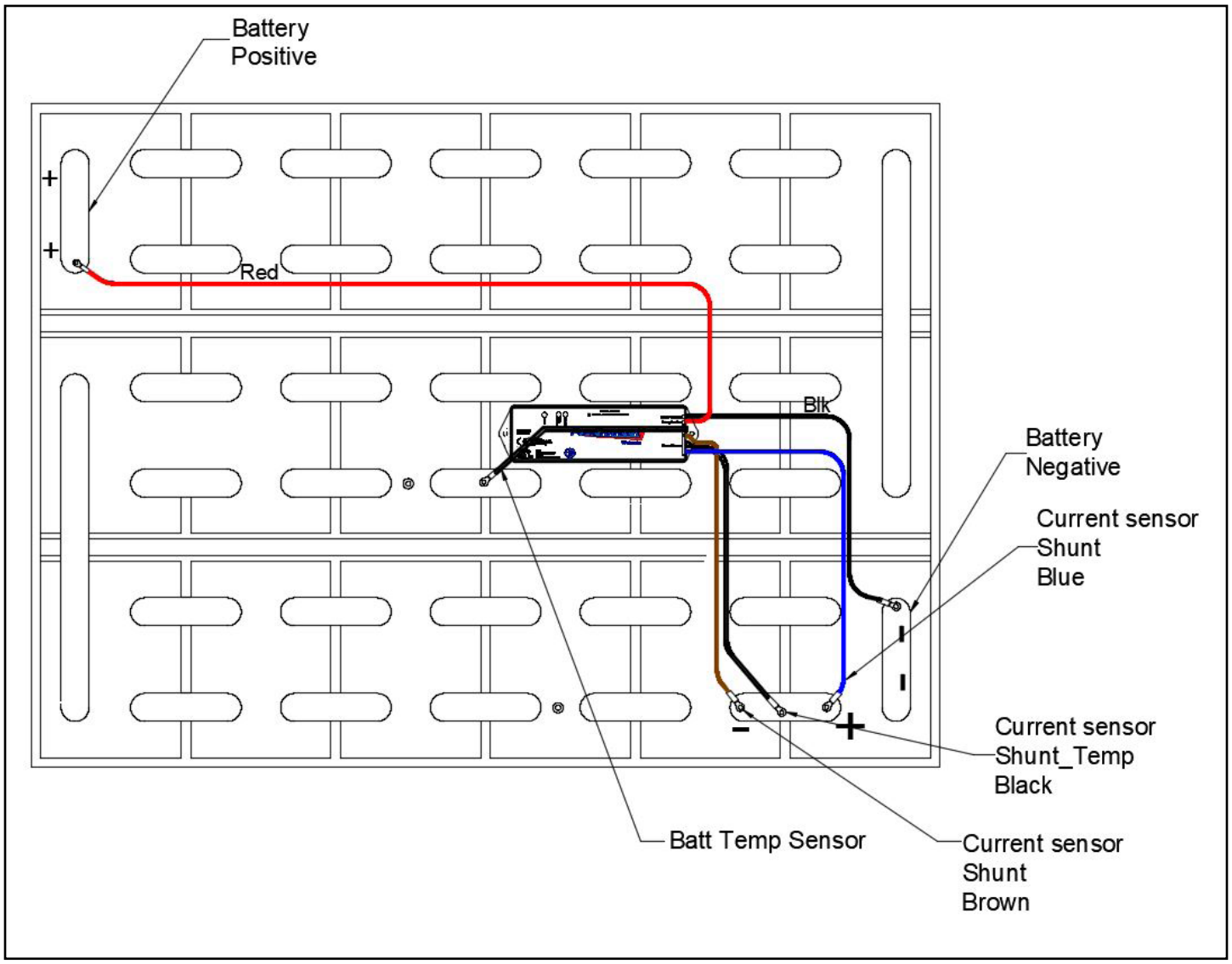


**BatteryRx – BMID III-B Installation**

NEW

**IMPORTANT NOTE:**
The brown and blue current sensors MUST be connected with the polarity shown in the illustration above. Unless these wires are correctly connected, the BMID III-B WILL NOT CONNECT TO THE CHARGER.

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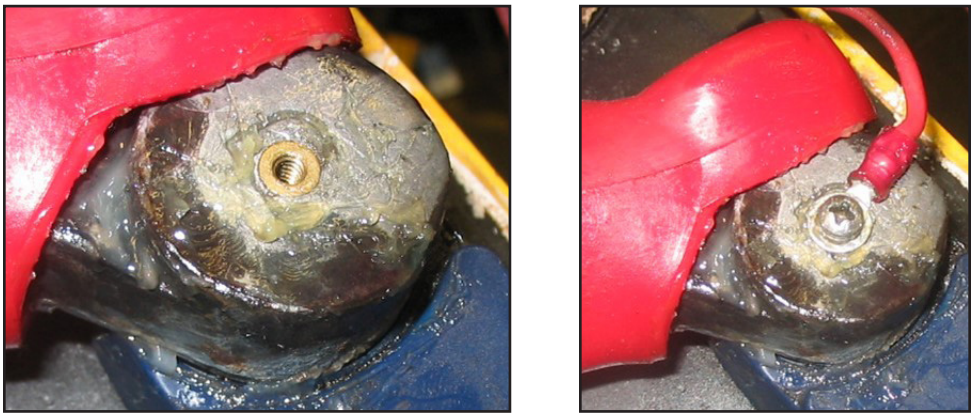
1. Remove the plastic cover from the appropriate terminal or interconnect bar.
2. Drill a 0.188-inch diameter hole between 0.290 to 0.350 inches deep (a drill bit is supplied in the hardware kit). Using a drill stop is recommended.
3. Gently tap the knurled brass insert into the hole flush with the terminal/interconnect bar surface. Refer to the images below.



**Knurled Brass Insert Installation**

4. Use the #6 screw, flat washer and lock washer to attach the sensor wire to the insert. Torque the screw to 9.60 in-lb (1.085 Nm).
5. Apply a small amount of terminal protective grease to completely coat the screw and ring terminal.
6. Replace the plastic cover.
7. Repeat the procedure for each sensor wire.

### 4.2 – Final Assembly

1. Secure the BatteryRx to a convenient interconnect bar with the supplied polypropylene tie-wrap.
2. Notify Customer Support when the installation is complete.

## 5 – LED Status Indicators

**BMID III-B status indicators visible from the top of BMID III-B:**

1. Green LED – ON when power is supplied to the BMID III.
2. Orange LED – blinks during wireless communication with the charger.
3. Red LED – blinks if software error.

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## 6 – Pressure Wash Limitation

BMID III-B has been designed to withstand high pressure washing up to 120PSI.

| | |
|---|---|
|  **WARNING** | Exposure to Pressure Washing above 120PSI voids the warranty. |

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# Appendix A

**Available Ampure Accessories:**

| Description | Part Number | Notes |
|---|---|---|
| Kit Dongle BMID III-B USB CBL | 5912660 | 1. Required to configure the BMID III-B.<br>2. Allows software upgrades.<br>3. Allows data downloads. |

## Battery Rx Installation/Validation Data Sheet

**See next page.**

# BatteryRx Installation / Validation Checklist

**Customer:** _____
**Address:** _____
_____
**Contact:** _____
**Telephone:** _____
**Installation Date:** _____

**Charger Type:**
SVS/DVS Indoor ☐
DVS/MVS Outdoor ☐
ProCore Edge ☐

**Battery Mfr:** _____
**Battery Voltage:** _____
**Ah Capacity:** _____
**Battery Type:** Flooded ☐ Gel ☐ AGM ☐
**BatteryRx Firmware Version:** _____

| | | | | Validation For Use with the BatteryRx Utility | | | | Call the Help Desk before changing the default values of the following parameters: Start I, SOC Limit, Target Voltage Limit, Temp Foldback, Internal Resistance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **Unit installed correctly** See Page 2 | | **Battery Temperature** (BatteryRx Utility Screen) | **Battery Voltage** (BatteryRx Utility Screen) | Battery Voltage (Meter Reading) Tolerance = +/- 0.1V | **Initial Zero Current** (BatteryRx Utility Screen) Tolerance = +/- 1.0A | **Start Current (I) Limit** | **EQ Start Day/Time** (Su, M, Tu, W, Th, F, Sa) | **EQ End Day/Time** (Su, M, Tu, W, Th, F, Sa) |
| **Vehicle ID** | **Battery ID** | **Yes** | No | | | | | | | |
| 1) | 1) | | | °F | V | V | A | | | |
| 2) | 2) | | | °F | V | V | A | | | |
| 3) | 3) | | | °F | V | V | A | | | |
| 4) | 4) | | | °F | V | V | A | | | |
| 5) | 5) | | | °F | V | V | A | | | |
| 6) | 6) | | | °F | V | V | A | | | |
| 7) | 7) | | | °F | V | V | A | | | |
| 8) | 8) | | | °F | V | V | A | | | |
| 9) | 9) | | | °F | V | V | A | | | |
| 19) | 19) | | | °F | V | V | A | | | |

## IMPORTANT INFORMATION – SAVE THESE INSTRUCTIONS

1. Thermistor/Temp Sensor installed on center-most inter-cell connector?
2. Current Sense Shunt blue and brown leads installed correctly? (Blue lead nearest to negative battery post)
3. All wires bundled and routed neatly?
4. Date and Time set correctly?

**NOTES:** (Report unit failures, changes to default parameters, etc.)

| | |
|---|---|
| BatteryRx S/N or Battery ID: | |
| BatteryRx S/N or Battery ID: | |
| BatteryRx S/N or Battery ID: | |

1) Place S/N sticker here (1)

2) Place S/N sticker here (2)

3) Place S/N sticker here (3)

4) Place S/N sticker here (4)

5) Place S/N sticker here (5)

6) Place S/N sticker here (6)

7) Place S/N sticker here (7)

8) Place S/N sticker here (8)

9) Place S/N sticker here (9)

10) Place S/N sticker here (10)

11) Place S/N sticker here (11)

12 Place S/N sticker here (12)

Email the form to **IPCServices@Ampure.com**